

## **HIGH TEMPERATURE LIGHT GUIDE**

### **ABSTRACT**

Disclosed is a method of forming an optical monitoring or transmitting light guide and a resulting apparatus that begins by bonding a bundle of optical fibers together using an epoxy and polishing the distal end of the bundle of optical fibers to create an optical aperture. The ratio of fiber size to binder particulate size of the epoxy used in the bonding process is sufficient to maintain the integrity of the bundle of optical fibers during the polishing of the distal end. The method positions the bundle of optical fibers into a protective sheath and a connector. The coefficient of thermal expansion of the epoxy used in the bonding process matches that of the connector. Once assembled, the invention positions the connector through the opening in the surface of a device, such that the distal end of the bundle of optical fibers is either recessed in, substantially flush with, or extends from the surface of the device through which the connector extends, depending on field-of-view requirements.